THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

IDEOLOGIES OF OKLAHOMA PHYSICIANS RELATED TO ACCEPTANCE OR REJECTION OF TWO MEDICAL CARE INNOVATIONS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

JAMES FALLON McTIGUE

Oklahoma City, Oklahoma

1971

IDEOLOGIES OF OKLAHOMA PHYSICIANS RELATED TO ACCEPTANCE

OR REJECTION OF TWO MEDICAL CARE INNOVATIONS

APPROVED BY

Charles R. Nicklas

William R. Hood

John D. Brehm

Ethelwyn B. Sybulski

Charles Cameron

G. Walston

DISSERTATION COMMITTEE

ACKNOWLEDGMENTS

I wish to acknowledge the guidance of Dr. Charles R. Wicke, Chairman of the Graduate Committee during this study. The support and assistance of Dr. Katherine B. Sohler, Dr. William R. Hood, Dr. Charles M. Cameron and Dr. William Watson are greatly appreciated. I wish especially to acknowledge the years of academic guidance and professional example of Dr. John G. Bruhn, Chairman of the Department of Human Ecology.

Gratitude is also expressed to Dean William W. Schottstaedt for his faith and guidance during my academic and professional careers. In addition I thank Dr. Wilson D. Steen whose early counsel was a major influence on my life. I am also indebted to the many friends who gave their encouragement and assistance during the preparation of this manuscript.

Appreciation is extended to the physicians throughout Oklahoma who participated in the study, to the University of Oklahoma Medical Center where the study was conducted, and to the United States Public Health Service's Global Community Health Fellowship for support during this academic experience.

Heartfelt gratitude is due my Mother and Father whose earlier sacrifices provided me nurturance, love and an education. I thank my sons, Timothy and Rory for their goodness and love during my many hours of absence. Most important, I wish to express my deepest gratitude to

my wife, Mary Louise, for her love, encouragement and prayers in arriving at this goal.

To Mary Louise

TABLE OF CONTENTS

LIST OF TABLES

IDEOLOGIES OF OKLAHOMA PHYSICIANS RELATED TO ACCEPTANCE OR REJECTION OF TWO MEDICAL CARE INNOVATIONS

CHAPTER I

INTRODUCTION

Innovation has often been dramatized as a powerfully disruptive force which shatters the status quo. However, this image of innovation is particularly inappropriate today when even the most potent innovation is unlikely to be accepted unless a crisis or series of crises have created a mood conducive to accepting the innovation (1). This crisis situation is characteristic of the current health care system in the United States as expressed in the introduction to the Report of the National Advisory Commission on Health Manpower (2):

> The indicators of such a crisis are evident to us as Commission members and private citizens: long delays to see a physician for routine care; lengthy periods spent in the well-named "waiting room", and then hurried and sometimes impersonal attention in a limited appointment time; difficulty in obtaining care on nights and weekends, except through hospital emergency rooms; unavailability of beds in one hospital while beds are empty in another; reduction of hospital services because of a lack of nurses; needless duplication of certain sophisticated services in the same community; uneven distribution of care as indicated by the health statistics of the rural poor, urban ghetto dwellers, migrant workers, and other minority groups which occasionally resemble the health statistics of a developing country; obsolete hospitals in our major cities; costs rising sharply from levels that already prohibit care for some and create major financial burdens for many more.

While the priority afforded medical care services can be debated

in the above statement, it does reflect the medical values of our culture and is an excellent summary of the medical care system. The relationships of men, money, machines and institutions making up this system must be considered. However, it is inevitable that the primary focus be on the problem of manpower.

Medical services are rendered by a pyramidal spectrum of medical personnel with a proportionately narrow stratum of physicians at the top. Below the physician are the ever increasing number of assistants and sub-professionals whose actions depend largely upon decisions from above. Therefore, within this broad scope of health manpower, emphasis must begin with knowledge of the physician. The physician is the primary contact of the consumer; he directs the patient into the system; controls the health expenditures for hospitals and drugs; and determines the utilization of other health personnel. Therefore, it can be said that the physician ultimately determines in most areas of the medical care system whether an innovation will be accepted or rejected.

This study is concerned with predicting physician's attitudes toward two innovations in health care. Innovations considered in this study were (1) the physicians' assistant as a practical method of alleviating medical manpower shortages and (2) the principle of a governmental guarantee of medical care as a universal right.

Theory and Background

It has been well documented by cross cultural research that the perception of objects or behavior is based largely on prior conceptualizations or categories (3). That these conceptualizations have a definite impact upon perception within broad cultural systems (4) and that the

individual's perception of an object is structured by his own expectations (5), have also been documented. A dynamic interaction exists whereby cultural systems show certain cultural values which influence the concepts, perceptions and attitudes of the individual, while the individual's own attitudes also influence the values of the cultural system.

Conceptualizations, perceptions and attitudes are internalized within the individual, although they can be differentiated from other internal states. Listed below are several characteristics of attitudes which Sherif and Sherif use to so differentiate them (6):

I. ATTITUDES ARE NOT INNATE. They are learned and therefore are embodied in terms such as "social orientation", "social drives", and "social needs".

II. ATTITUDES ARE NOT TEMPORARY STATES BUT ARE MORE OR LESS ENDURING ONCE THEY ARE FORMED. This does not mean that attitudes cannot be changed.

III. ATTITUDES ALWAYS IMPLY A RELATIONSHIP BETWEEN THE PERSON AND OBJECT. They are learned or formed in relation to identifiable referents such as ideologies, institutions, values, persons or groups.

IV. THE RELATIONSHIP BETWEEN PERSON AND OBJECT HAS MOTIVATIONAL-AFFECTIVE PROPERTIES AND IS NOT NEUTRAL. These properties derive themselves from the highly significant social interactions in which attitudes are formed. The self, the social environment and the objects exhibit emotional linkages.

An attitude has been defined as "the individual's set of categories for evaluating a stimulus domain, which he has established as he learns about that domain in interaction with other persons and which

relate him to various subsets within the domain with varying degrees of positive or negative affect" (7). It is this "evaluation of the stimulus domain" and the resultant "degrees of positive or negative affect" which cause individuals to approve, disapprove or be non-committal toward the object and allow the researcher to assess the operant latitudes of attitude structure.

An individual's attitude regarding a particular object does not operate independent of his set of categories surrounding that object. His perception, thinking and judging are profoundly affected by the preestablished system of ordering or conceptual placement concerning peripheral and related objects. It is this dependence upon a system of categories that may lead the individual into a kind of conceptual closedness and blindness to alternative evaluations not embodied in the conceptual framework he is operating in at that moment (8). In other words, the necessity of having sets of categories can limit one's acceptance or rejection of specific objects. This is particularly true if he has learned about this object by dictum rather than by experience, if he has absolutist rather than probabilistic concepts and if he has little knowledge about the object. In this particular combination, the individual is apt to be least flexible about the acceptance of that object (9). It follows that in the case of the physician's attitude regarding medical care innovation, he would be influenced by his knowledge of the innovation, his concept strength and how he has learned about the innovation.

Several factors combine to produce a distinct sub-culture of physicians (10). Important among these are: selective admission policies of medical schools, effective socialization during medical education,

adequate financial remuneration in medical practice, a strong esprit de corps within the medical profession, and frequent approval by physicians' reference groups. Furthermore, the demands of medical training and colleague interaction teach the physician that in his professional dealings he is less disciplined as he becomes too independent, less emotionally stable as he is more compassionate, less dignified as he demonstrates more candor, and less objective as he is more imaginative (11). Thus, it is possible that many attitudes of a physician towards medical care innovation might be dictated by his medical sub-culture, reflecting the authoritarian mold of his education and restricted freedom resulting from professional conformity.

The consumers of the physician's services have projected social values upon the medical practitioner which demand the discipline, rigor, self denial and a dignity which inspires patient confidence. These social values also dictate that the physician have an objective approach toward the patient's illness and that he utilize institutions, individuals, knowledge, finances, or technology to facilitate a cure for the illness. These have resulted in improved health for the nation and the world since the beginning of the century. However, these same social values have resulted in a diminishing of the humanistic values of medical practice and have helped to precipitate the state of crisis in health care now experienced in the United States.

This crisis has been enunciated by the lay press in newspapers and as cover stories in periodicals (12, 13, 14, 15) as well as in the professional literature (16). The articles have pointed out that the current annual expenditure of almost $70 billion for medical care will

increase drastically over the next few years, as costs continue to rise (17). This cost rise is projected to exceed the increase in the Consumer Price Index. For example, in a three year period ending June, 1969, the Consumer Price Index, excluding the medical component, increased 12.4 percent while medical care prices rose more than 22 percent during the same period (18). Since 1969, the total costs of medical care have climbed by more than 50 percent, and physicians' fees alone have risen by 58 percent, far exceeding the 31 percent rise in the Consumer Price Index. In total dollar expenditures, health has become the second largest industry in the United States: in fiscal year 1969 - 1970 it accounted for $67.2 billion, or almost seven percent of the Gross National Product. It has been estimated that by 1980, health care will make up more than nine percent of the Gross National Product (19).

Nevertheless, this increase in expenditure does not reflect more advanced levels of health for the nation. The infant mortality rate is lower in 12 other industrialized countries. In maternal mortality the United States dropped from first place in 1951 to seventh place in 1966. Life expectancy for men is higher in 17 countries and women live longer in 10 (20).

The boundary between public and private health has become less distinct over the past quarter-century. The Hill-Burton Hospital Construction Act of 1946 has helped build more than 3,700 hospitals, public health centers, extended-care facilities, diagnostic and treatment centers and rehabilitation facilities. Total cost exceeded $11-billion, of which one-third was federal and the remainder from individual communities. The National Institutes of Health have contributed over $14-billion

in support of research and research training since its rapid appropriation growth during the 1950's and 1960's when the Heart (NHI), Mental Health (NIMH), Arthritis and Metabolic Diseases (NIAMD), and Child Health and Development (NICHD) Institutes joined the National Cancer Institute which was founded in 1938. Although federal funds were used to back up state and local funds for manpower development before 1963, it was in that year that broad federal legislation was passed to subsidize training in the health professions. This was expanded in 1964 with the Nurse Training Act, and in 1965 by the Health Professions Educational Assistance Amendments and in 1966 by the Allied Health Professions Personnel Training Act (21).

The public sector became even more involved with private medicine with the passage of such major medical care innovations as: Community Mental Health Centers [1963] (22), the Maternal and Child Health and Mental Retardation Planning Amendments [1963] and the Maternal and Child Health Amendments [1964] (23), Regional Medical Programs [1965], Medicare and Medicaid Social Security Amendments of 1965, and the Comprehensive Health Planning and Public Health Service Amendments, of 1966, PL 89-749 (24, 25). These changes in the health care delivery system have tended to increase the demand for services made available through research findings, new facilities and greater consumer capacity to purchase the services. The innovations continue to strongly affect the entire system. They seem destined to generate further changes in the same way as the "snow-ball effect" of innovation has altered institutions in the past (26).

In fiscal year 1971, the Federal Government paid for almost 33

percent ($21 billion) of the total national health bill (27). Most was for Medicare, Medicaid and other health care services which were delivered by inadequate systems, further accentuating the imbalance between demand for health-care services and the capacity of the health-care system to respond.

A principal reason for the inability of the health delivery system to respond to the demand for health care is the manpower gap resulting from an increased demand for physician services. The maldistribution of health manpower, the increased need for specialization, and the need for more personnel are all factors in the crisis. The numbers of physicians, nurses and members of more than 200 other allied health careers are not increasing at nearly the rate that is needed to meet the increased demand (28).

At the beginning of the century three out of five health professionals were physicians (29) but today the nation's 300,000 physicians constitute less than 10 percent of the approximately 3,400,000 health workers (30).

Although for the most part the best medical care is rendered by highly trained physicians, it does not necessarily follow that only physicians should render every type of medical care or that maximum medical training is needed to fill the medical manpower gap (31, 32). Thus many programs have been evolving in recent years to utilize less highly trained individuals than a physician to deliver personal health care. These individuals have been called by various titles such as "physician's assistants", "doctor's assistants" or "clinical associates" and over 30 different training programs have developed throughout the

United States to prepare them to assume their roles in the health care team (33). The ability of these newer para-professionals to assist physicians is becoming recognized in many parts of the country (34).

Oklahoma physicians are increasingly aware of physicians' assistants not only from national publicity but because of new programs at the University of Oklahoma School of Health which began in October of 1970, and at Oklahoma State University scheduled for 1971. For this reason the physician's attitude toward this innovation was selected as one of the dependent variables in this study.

The idea of a physician's assistant has been endorsed for many decades and, in some instances, for centuries in many parts of the world. Perhaps the oldest type of physician assistant functioning today is the Russian feldsher (35, 36). A continuation of a profession introduced into Russia in 1700, the feldsher (from the German word for field) today operates midway between physicians and auxiliaries. Nurses, pharmacists, midwives and laboratory technicians belong to the same general group of personnel, but the feldsher's status is relatively higher. A second example of the physician assistant used in many of the developing countries is the assistant medical officer (37). This position represents the prime source of medical care to millions of persons throughout the world today.

In the United States the crisis in medical manpower has led to the slow evolution of various types of assistant physicians, as doctors have delegated more responsibility to lesser trained individuals. For example, the delegation to the nurse of responsibility for giving injections. In recent years a number of informal and formal methods have

become established for training "assistant" types to perform certain functions formerly performed only by physicians. At present there are approximately 30 experimental or developmental training programs in the United States (38). Acceptable standards, utilization patterns and functions of these individuals after training have not been well defined in Oklahoma.

In addition to the need for physician assistants, the physician's attitudes toward a governmental guarantee of medical care as a right for everyone, regardless of ability to pay was selected as another dependent variable. Health as a right rather than a privilege is now almost universally accepted, but a governmental guarantee of that right is controversial enough to expect diverse views among physicians.

Literature Review

In recent years the challenges of change in the provision of medical care have produced much survey research in the planning, operation and evaluation of new service programs. Most of these studies have explored two main areas: (1) public information, attitudes and behavior, and (2) health needs, resources and utilization. These have mostly dealt with what the consumer of medical care wants (39, 40). Few studies on provider groups have been carried out despite the advanced techniques available to measure attitudes by means of scales or latent structure analysis (41).

Little research has focused on the acceptance or rejection of change among health professionals. An exception to this trend is the study by Pearlin (42) which documented the resistance of nursing personnel to proposed changes in the care of hospitalized mental patients.

Pearlin assessed resistance through five items proposing diverse changes which formed a Guttman scale with a reproducibility of .92. The results indicate unidimensionality and suggest the presence of a general attitude toward change rather than a series of specific feelings about discrete innovations. The author related resistance to change to professional position, education and leadership. For example, registered nurses were least resistant and nurse assistants most resistant. Coe (43) studied anesthesiologists to identify those who were open to changes within their profession and those who relied on traditional professional practices and ideologies. He based his study primarily on: (1) size of hospital practiced in, (2) medical school affiliation, (3) year of graduation from medical school, (4) post graduate training, and (5) whether the physician was in a salaried or a fee for service practice. Those anesthesiologists most strongly oriented to change were generally younger, highly specialized and worked for a salary in hospitals affiliated with medical schools. They were also more interested in attracting good recruits to their field than those anesthesiologists less oriented to change.

Related studies have employed relatively sophisticated research designs and good sampling procedures; however they have usually been of "captive" medical student or faculty populations. For example, studies have been conducted to determine the relevant factors in the decision to become a doctor (40, 44) in career interests and expectations (45), specialty choices (46), the development of the self-image and "socialization" of medical students (47) as they learn to think and behave like a physician (48).

Although work has been done on the professional responsibilities and performances of nurses, physicians have not often been subjected to this type of research. This is probably due to their higher professional status, the individual nature of private practice and the greater difficulty of interviewing them in the field. Some surveys of physicians have investigated the influence of specific factors upon medical practice. For example, Kutner (49) has shown that the reference group of the surgeon has considerable influence upon his technological orientation, and Straus (50) has attributed the private practitioner's concern for prestige for his neglect of the alcoholic patient.

Becker (51) studied local health officers in an attempt to identify attitudes and characteristics that might be related to "innovativeness" - the extent to which they utilized innovations earlier than their colleagues. He measured six dimensions of attitudes: cosmopolitanism, economic ideologies, activism, community progressiveness, community willingness to innovate and political orientation. He then correlated these with adoption dates of public health programs. The best general predictors of "innovativeness" were: higher rank in medical school and degrees held beyond the baccalaureate. He found that all attitude scales that were measured had some predictive power and that all relationships were significant. Health officers who adopted new programs earlier than their peers tended to be more cosmopolitan, to view their communities as progressive and to express a more liberal political orientation.

The diffusion of new drugs has been studied and related to certain physician characteristics by Menzel (52) and Coleman (53). Both of

these studies emphasized social processes and networks of interpersonal relations affecting the diffusion of drug prescribing.

A review of studies regarding physician political ideologies and views was done by the Bureau of Applied Research of Columbia University (54). This review derived generalizations about the political attitudes and behavior of physicians and proposed that whereas doctors share the conservative values of other American social elites, physicians are predisposed to a particularly professional belief system with distinctive political orientations because they are a very successful social elite in a highly developed profession.

The most in-depth interview survey of physician ideologies was carried out by Colombotos of the Columbia University School of Public Health and Administrative Medicine. He examined the individual physician's political ideology, his attitudes toward issues in the organization of medical practice, and his career values. He also studied the relationships between certain objective background characteristics, such as social origins, type of practice, and personal attitudes. In a paper concerning physicians' attitudes toward Medicare (54, 55) and toward county health departments (56), Colombotos states that physician attitudes are part of a structure of attitudes, an ideology. In the latter publication, he compared health officers and private practitioners and concluded that health officers, as a group, were only a little more likely to support a county health department than their colleagues in private practice. They also differed little in their attitudes toward government participation in medical care and toward more general economic-welfare issues. Colombotos concluded that there were two

distinct sources of resistance to change: ideology and self-interest (57). In a later publication (58), Colombotos discussed the effects of physicians' socioeconomic, religious and political backgrounds on two sets of attitudes: (1) their emphasis on "success" values, and (2) their political ideology on economic-welfare issues, including government participation in medical care and their political party preference. He later reported on the changes in physicians' attitude structure as a result of the passage of Medicare legislation (59).

Dogmatism and authoritarianism have been related to resistance to change by many authors (60). Dogmatism and authoritarianism among members of the medical profession have been investigated but again mostly among medical students, interns, residents and faculty. Parker (61) tested 118 medical students at Jefferson Medical School for authoritarianism and separated them into authoritarian types. These groups were then compared by group averages on the Edwards Personal Preference Schedule. The authoritarian group showed significantly different scores in four personality characteristics from those of the non-authoritarian group. Furthermore, the scores on these characteristics (order, intraception, nurturance, and aggression) were in accord with what had been predicted from a knowledge of the dynamics of the authoritarian personality as outlined by Adorno, et al. (62). Authoritarian medical students ranked psychiatrists lowest in professional admiration and the non-authoritarian students ranked obstetricians lowest in admiration. Coker, et al. (63) sampled over 2,500 medical students from throughout the country and found that those scoring high on authoritarianism tended to select general practice and reject internal medicine and psychiatry.

Furthermore, authoritarian students tended to select a field before, or during, their freshman year in Medical School.

Marcus (64) investigated dogmatism among physicians at various ages, and at various levels of medical training. In addition, medical specialties were compared in terms of degrees of dogmatism. He found that the level of dogmatism decreased during college and medical school. However, dogmatism tended to increase among residents, except for psychiatric residents. Board certified specialists had levels of dogmatism similar to the residents. It is unfortunate that the author neglected to study general practitioners. Such an investigation would have been particularly pertinent in view of Coker's previously mentioned findings.

A recent German study of authoritarianism among private practice physicians in a city and county around a German University is also relevant (65). The authors classified 43 percent of the physicians as highly authoritarian. These practitioners were described as those who cultivated very close contacts among themselves but rarely associated with hospital staff doctors. They also tended to deny that they ever erred or could learn anything from their specialist colleagues and they strongly rejected the idea of control examinations.

In summary, the review of past attitudinal studies of the medical profession demonstrates that they have concentrated primarily upon the personnel of university medical centers to the neglect of studies of attitudes among private practitioners. Also, most studies have considered only a narrow spectrum of attitude sets.

Two previous studies have been carried out regarding physician views of physician assistants. One such study was conducted in

Wisconsin to assess the views of practicing physicians regarding the responsibilities which they would, or would not delegate to assistants (66). Thirty-two percent responded to a questionnaire mailed to all practicing physicians in the state. Sixty-one percent believed that assistants were needed and 42 percent stated that they would use an assistant in their practice. The majority agreed on the following: the doctor's assistant should have training approximating that of a registered nurse, plus one year or more; his salary should be between $7,500 and $10,000; and he could be employed either in a hospital or in a physician's office. A majority of all specialtists agreed that assistants should be excluded from the following: performing physical examinations, doing emergency room procedures, giving anesthetics, providing postoperative care, performing deliveries, and providing prenatal and well baby care. Physicians from smaller communities were generally willing to delegate more responsibility to the assistants. These findings are noteworthy because while most existing programs train non-physician midwives, anesthetists or ex-corpsmen most responding doctors did not approve these duties for assistants. Furthermore, the study had a 68 percent non-response, and the lack of interest in this group may indicate indifference or denial of the need for the physician assistant.

The second study, conducted in Delaware, sought to ascertain physician opinions regarding the need for physicians' assistants, their willingness to use this type of personnel and their willingness to participate in the training of these individuals (67). Questionnaires were mailed to all members of the Medical Society of Delaware, but only 151 of those returned were sufficiently complete to be analyzed. The

findings were quite unexpected since 20 percent more physicians reported that they would use a physician assistant than said there was a need for this type of personnel. The authors suggest that this discrepancy might represent the degree to which different physicians see themselves as personally busier than their colleagues. In this study the general practitioners saw a lesser need for physicians assistants, and the nonsurgical specialists saw a greater need. Surgeons were the second lowest in perception of the need for assistants but second highest in their willingness to use them.

The present study differs from the two previous reports in that the information was gathered through personal contact with the physician and was done on a randomly selected sample of Oklahoma physicians. It also differs because the intention was not solely to assess physicians' opinions toward physicians' assistants, but rather to relate the opinions of acceptance to the physician's relative dogmatism - anxiety, professional orientation, success value orientation, and economic-welfare views. The physician's socialization process, educational background, personal characteristics and ideologies were also considered.

Hypothesis

The main hypothesis of this study is:

A physician's acceptance or rejection of a medical care innovation is significantly related to his degree of: dogmatic conceptualizations, success value orientation, professional orientation, and economic-welfare views.

Proposition I

The need for physician assistants will be viewed more

favorably by physicians who have low dogmatic conceptualizations, low success value orientation, a high degree of professional orientations and a low degree of conservative economic-welfare views.

Proposition II

Governmental guarantee of medical care as a right for everyone will be viewed more favorably by physicians who have low dogmatic conceptualizations, low success value orientations, a high degree of professional orientation and a low degree of conservative economic-welfare views.

Dependent Variables:

1. Favorable (acceptance) or unfavorable (rejection) of the need for physician assistants.
2. Agree (acceptance) or disagree (rejection) with governmental guarantee of medical care as a right for everyone.

Independent Variables:

1. Dogmatism-anxiety score, high or low.
2. Liberal or conservative economic-welfare views.
3. Profession or patient orientation.
4. "Success" value orientation, high or low.

Contingent Variables:

1. Graduated from medical school before or after 1950.
2. Graduated from medical school in Oklahoma or outside.
3. Specialty training, board eligible or certified, or not board eligible or certified.
4. Medical school affiliation or none.

5. Salaried or fee for service.
6. Religious background: Protestant, Catholic, Jewish or other.
7. Physician is Republican, Democrat or other.
8. Urban or rural practice.

Definition of Terms

Physician as used in this study refers only to an individual possessing a Doctor of Medicine degree.

Medical Care Innovation as used in this study was limited to two qualitatively different items new to medical care in this country: (1) physician assistants and, (2) a governmental guarantee of medical care as a universal right.

Acceptance was inferred from the physician's answer of "favorable" to the need for physician assistants or "agree" with governmental guarantee of medical care for everyone, respectively.

Rejection of the innovation means that the physician's reply was "unfavorable" to the need for physician assistants or "disagree" with governmental guarantee of medical care for everyone, respectively.

Relative Dogmatic Conceptualizations was measured by Shulze's Dogmatism-Anxiety Scale (68).

"Success" Value Orientation of a physician was judged by his degree of emphasis on either "economic opportunity" or "social prestige" as inferred from his reaction to a set of alternatives.

Professional Orientation of a physician was determined by his relative professional or patient orientation, as inferred from his response to selected questions.

Economic-Welfare Views of a physician were measured by responses to selected politico-economic questions.

Significance of the Study

This study was proposed to identify attitudes and other social and professional characteristics of physicians which may predict their acceptance or rejection of medical care innovation. Sociological and social psychological theory was used to determine sets of attitudes and other characteristics of practicing physicians, which influence the practical problems of medical care delivery. Roemer and Elling (69), in a review of sociological research on medical care, suggest that "great benefits are to be derived from the interplay of sociological theory, exacting empirical methods and concern for practical problems." This study embodied this approach.

Most past investigations of the medical profession have been limited to captive medical students and faculty in university medical centers. This survey was concerned with a representative sample of physicians in Oklahoma who were interviewed in their offices.

This study could also assist in the planning and execution of physician's assistant programs at the University of Oklahoma Medical Center. The prerogative of the physician to delegate responsibilities to physician assistants must be considered if these individuals are to be efficiently trained and utilized in future programs to improve medical care in Oklahoma.

In general, innovative movements occur when the following two conditions exist: (1) high stress for the individual members of the society and (2) disillusionment with a distorted Gestalt (physical,

biological and psychological configurational whole) of the culture (70). The crisis in the United States today with respect to the delivery of health services exhibits both of these conditions. At the same time differences can exist in the individual perception of the stress and the degree of disillusionment felt by the person. The poverty consumer is stressed and disillusioned with the Gestalt of the medical culture when he does not receive adequate medical care. However the physician may not experience stress or disillusionment with the technical and sophisticated medical system. This conflict of interest can be further compounded by the bureaucracies of medical education, hospitals, consumer advocate groups (71) and government.

It is hoped that this study will afford a better understanding of the physician, and that together with other studies of consumers and bureaucracies, an ecological understanding (72) may evolve that will help to defuse the medical care crisis that now exists.

CHAPTER II

RESEARCH METHODS

Population

There were 3,834 physicians with the M.D. degree licensed to practice medicine in Oklahoma in 1970 (73). However, those listed included physicians who practiced in other states, those in military service and retirees no longer in active practice. In addition to the medical physicians there were approximately 400 doctors of osteopathy (74). However, in this study only physicians possessing a M.D. degree were considered. Furthermore, it was limited to medical doctors who were active professionally in Oklahoma, and not employed by the federal government. In February, 1970, the Health Resources Information Center of the University of Oklahoma School of Health compiled and published a list of just over 3,000 medical physicians in active practice. Although this listing included physicians who were in the military, both inside and outside of Oklahoma, and physicians employed by the Veterans Administration and Public Health Service, it was possible to eliminate most of these because they were listed by address. Thus, the total population for this study was approximately 2,900 medical physicians who were professionally active in Oklahoma in February, 1970 and not employed by the federal government.

Characteristics of Population

Oklahoma has a ratio of M.D. physicians (non-federal, active) to population of approximately 1:990, whereas the United States has a physician to population ratio of 1:706. Thus Oklahoma has fewer physicians in relation to its population than the nation as a whole. At the same time it is similar in relation to physician ratio with its immediately neighboring states: Kansas with a population per physician ratio of 915, Texas with 927, and Arkansas with 1,147 (75). However, the physician manpower supply is not truly represented by these figures because a greater portion of Oklahoma physicians are engaged in patient care as compared to the rest of the nation.

An analysis of the year of graduation from medical school of Oklahoma physicians showed that approximately 51 percent graduated prior to 1950 and that Oklahoma physicians were slightly older than physicians in the rest of the nation. This may be attributed to Oklahoma's having a smaller proportion of interns and residents in training than the nation as a whole (76). Oklahoma also has a much smaller portion of foreign graduates. Less than three and one-half percent of medical doctors in Oklahoma are graduates of foreign medical schools, whereas 17.1 percent of all medical doctors in the United States are graduates of such institutions.

There are substantial differences in the geographic distribution of physicians in Oklahoma. In 1967 the Oklahoma Health Resources Information Center measured these differences. It was found that the physician to population ratio ranged from a high of 1:690 in the Oklahoma City area to a low of 1:2439 in the McAlester area of southeastern Oklahoma.

The Tulsa area showed a ratio of 1:1176. Approximately 56 percent of the physicians are located in cities of 100,000 or more population.

In the United States more than 25 percent of the physicians are in general practice, compared with 34 percent of the physicians in Oklahoma in general practice, but there is a substantial urban-rural difference. Of the physicians in Oklahoma and Tulsa counties, more than 21 percent are in general practice, whereas more than 60 percent are in general practice in the areas outside these counties. Oklahoma has a smaller percentage of physicians in training as interns, residents or fellows than the rest of the country. In Oklahoma less than 12 percent of the physicians are interns, residents or fellows, contrasted with 16 percent for the nation. Oklahoma also has a smaller percentage in academic medicine (3.8 percent), administration (0.6 percent) and research (0.8 percent). Comparable figures for the United States are 4.2 percent in academic medicine, 1.0 percent in administration and 1.3 percent in research.

Finally, Oklahoma shows a somewhat smaller proportion of specialists: internists, 11.8 percent; pediatricians, 5.1 percent; surgeons, 28.7 percent; and psychiatrists, 4.8 percent. The United States percentages are 14.2 percent in internal medicine, 6.2 percent in pediatrics, 29.2 percent in surgery, and 6.9 percent in psychiatry (77).

Sample

Weighing the limits of time, travel and expense it was decided to interview 100 randomly selected physicians from the total population of 2,910 non-federal, active physicians in Oklanoma in February, 1970. The population was numbered from one to 2,910 and 100 physicians were

chosen by using a table of random numbers. After the first 100 random selections were made, an additional pool of 50 random numbers was drawn to provide substitutes in the event that a physician had moved or retired or was deceased, employed by the federal government, or a non-responder.

Selected physicians were sent a letter (Appendix A) which explained the research, sought their cooperation and indicated that they would be contacted by telephone within a week to arrange for an appointment for the interview. They were then telephoned and a twenty-minute appointment was requested to complete the questionnaire. Pre-testing determined that the questionnaire required ten [10] to twenty [20] minutes to administer.

Interview Schedule

A questionnaire (Appendix B) was developed to collect information concerning the physician's attitudes both about the need for physician assistants and about a governmental guarantee of medical care as a right for everyone. The questionnaire also elicited the physician's degree of dogmatism, his success-value orientation, his patient or profession orientation, and his conservative or liberal economic-welfare views. Additional information concerning age, socio-economic background, specialty training, medical school and political party affiliation were also incorporated into the questionnaire.

The entire questionnaire was pre-tested with student physicians in the School of Health in order to clarify questions, to determine attitudes and reactions to specific questions and to establish the time required to administer the questionnaire.

The 10 item dogmatism-anxiety scale was also pre-tested to measure its validity. A separate questionnaire was constructed which included the shortened 10 item scale within Rokeach's original 40 item dogmatism scale (78). This was administered to 20 physicians who were primarily engaged in private practice and attending a continuing education class at the Medical Center. The 10 item, shortened version showed a moderately high correlation [.66] with p value <.005 (Appendix C). This is consistent with Schulze's original finding when he tested the questionnaires on 172 introductory sociology students (79).

Innovation

This study uses two innovations within the medical care field as indicators of the physician's acceptance or rejection: (1) physician assistants and (2) the governmental guarantee of medical care as a right for everyone. A physician's acceptance or rejection of these innovations was judged from his response to the following respective statements: (1) "Do you think there is a need for this type (physician assistant) of medical personnel?" and (2) "It is the responsibility of the entire society, through its government, to provide everyone with the best available medical care, whether he can afford it or not." The response allowed the physician to select one of seven possible positions on a Likert Scale (80) ranging from "agree very strongly" to "disagree very strongly", with a neutral position at the center. "Agree" responses were considered acceptance of the innovation and "disagree" or neutral responses as rejection.

Dogmatism-Anxiety Scale

The physician was asked whether he agreed or disagreed with the statement and to indicate the strength of his choice by a number, 1 = a little, 2 = on the whole, and 3 = very much. The scale was developed by Shulze (79) and consists of 10 items from the original 40 item Form E of Rokeach's (81) dogmatism scale. It had a coefficient of reproducibility (CR) of .83 when tested on freshman college students. Therefore, Shulze judged the scale to be multi-dimensional because Guttman specifies that a unidimensional scale must have a CR of .90 or above. It was concluded that the scale had intruding variables such as anxiety, rigidity, authoritarianism, self-rejection and paranoia. However, this is a shortcoming shared with Rokeach's original 40 item dogmatism scale. Fruchter, et al. (82), demonstrated that dogmatism had a factorial content in common with anxiety. Furthermore, Vacchiano (83) and Plant (84) both support Rokeach's contention that dogmatism itself is a generalized theory of authoritarianism. Other authors (85, 86) have drawn parallels between dogmatism and rigidity. Therefore, the multi-dimensionality of Schulze's scale is of little importance, since dogmatism, anxiety, authoritarianism and rigidity appear to be interrelated as personality factors. The scale was totaled using positive values for "agree", zero for "neutral", and negative values for "disagree", and the cumulative score was the measure of the degree of dogmatism-anxiety. The maximum possible score was +30 and the minimum possible score was -30. The total sample was then divided in half, the upper half was designated as the "high dogmatism-anxiety group" and the other half as the "low dogmatism-anxiety group".

Success Value Orientation

The physician's "success" value orientation was ascertained by the following questions derived from the Colombotos (87) survey of physicians:

A. Which of the following things was the most important to you then in your decision to go into medicine - was it the social prestige of a medical career, the chance to help people, the chance to do work of special interest to you, or the economic opportunity?

B. Which of these things was second most important to you then in your decision to go into medicine?

C. What about the present - which of these things is most important to you now - is it the social prestige of a medical career....?

D. Which of these things is second most important to you now?

Those physicians who gave "social prestige" or "economic opportunity" as a first or second choice (then or now) were classified as having a high success value orientation, those who gave the other two reasons were classified as having a low success orientation.

Colombotos found that physicians from lower class families were more likely than physicians from upper class families to be high in success-value orientation. He also found that Catholic and Protestant physicians were more likely to stress success values than Jewish physicians. However, he suggests that, although socioeconomic background has a strong influence on an individual's reasons for going into medicine, once he is in the profession, the influence of his colleagues becomes important, and the more success-oriented become less so, and the less success-oriented become more so. He found that approximately 35 percent

of the physicians tested had a high success value orientation (88).

Degree of Professional Orientation

The physician's relative orientation to his professional colleagues or to his patients was judged from his response to the following questions taken from Coleman, Katz and Menzel (89):

How would you rank the importance of these characteristics in recognizing a good doctor in a town like this?

a. The respect in which he is held by his own patients.

b. His general standing in the community.

c. The recognition given him by his local colleagues.

d. The research and publications he has to his credit.

The physicians were then classified as "profession" or "patient" oriented according to the ranking given.

Profession Oriented	Patient Oriented
cdab	abcd
cadb	acbd
cbda	acdb
cabd	bacd

Other ranking combinations were possible, but in general any rank beginning with (d) or (c) would cause the physician to be classified as "profession" oriented and any rank beginning with (b) or (a) would mean a classification of "patient" oriented.

Economic-Welfare Views

The physicians' liberal or conservative economic-welfare views were measured by their reactions of "agree", "disagree" or "neutral" and

the strengths of their choice (1 = a little; 2 = on the whole, and 3 = very much) to the following statements:

1. People ought to experiment with new ideas even if they seem to go against tradition.
2. The government must continue to play a major part in the economic life of the nation.
3. It is the responsibility of the entire society through its government, to guarantee full employment.
4. Poverty could almost be done away with if we made certain basic changes in our social and economic system (90).

The scale was then totaled using positive values for "agree", zero for "neutral", and negative values for "disagree"; the cumulative score was the measure of economic-welfare views. The maximum score possible was +12 and would indicate liberal views, the minimum score possible was -12 and would indicate conservative views.

Information was also collected regarding year of graduation from medical school, name of school, specialty training, major source of income, and political party affiliation. These contingent variables were included in the analysis of the data.

CHAPTER III

RESULTS

Interviews were completed on 73 percent of the original sample of 100 physicians. Four were deceased, three had retired, twelve had moved out of state or left no forwarding address, seven refused to participate when contacted by telephone and two refused to complete the interview. Twenty-eight physicians were randomly selected from the supplementary sample pool, bringing the total study sample to 100.

The sample and the population are quite similar with respect to specialty type, urban-rural location and the place and year of graduation from medical school (Table 1).

Only eight percent of the physicians sampled were Catholic, three percent were Jewish, one percent had no religious affiliation and the remaining 88 percent were Protestant. The political party affiliations of the physicians were heavily concentrated with 75 percent in the Republican party, 13 percent Democrat, and 12 percent Independent in their affiliations.

Those physicians who refused were generally older, all nine had graduated from medical school before 1950. Eight were graduates of out of state medical schools; only one graduated from the University of Oklahoma. Two of the nine were in general practice and the remainder were in surgical specialties. Seven practiced in urban areas and two

TABLE 1

COMPARISONS BETWEEN STUDY SAMPLE AND POPULATION OF OKLAHOMA PHYSICIANS ON SELECTED CHARACTERISTICS

	Study Sample Percent	Population Oklahoma Physicians Percent
SPECIALTY		
General Practice	44.0	34.0
Medical Specialties [a]	13.0	20.2
Surgical Specialties [b]	30.0	28.7
Other Specialties [c]	13.0	17.1
IN TRAINING	8.0	11.7
LOCATION		
Urban [d]	50.0	56.4
Rural	50.0	43.6
GRADUATED MEDICAL SCHOOL		
Before 1950	45.0	51.1
After 1950	55.0	48.9
University of Oklahoma	52.0	50.0
Other Medical School	48.0	50.0
Foreign Medical School	2.0	3.4

[a] Internal Medicine, Pediatrics, Dermatology

[b] General Surgery, Obstetrics-Gynecology, Orthopedics, Urology, Otorhinolaryngology

[c] Psychiatry, Pathology, Radiology, Anesthesiology, Neurology, Public Health

[d] Counties of more than 100,000 population

in rural communities.

The major innovations used in the hypothesis were: (1) need for physician assistants and (2) the governmental guarantee of medical care as a right.

Need for Physician Assistants

The vast majority of physicians sampled agreed that there was a need for this type of health personnel. While 90 percent of the respondents agreed with the statement, less than one-half, 49 percent, felt strongly positive. The data approximates the previously mentioned study of physicians in Delaware, in which 88 percent of those who returned the questionnaire saw a need. The percentage of sampled physicians in both of these studies perceiving the need is higher than in Wisconsin where only 61 percent responded affirmatively[1].

The high percent of physicians accepting the need prevented the carrying out of detailed comparisons between those accepting and those rejecting the need for physician assistants. Table 2 provides a summary breakdown of the ideologies that bear directly on Proposition I of the Hypothesis. The findings support Proposition I to the extent that the profession oriented and low success value oriented physician is more likely to accept the need for physician assistants. The proposition was only partially supported since physicians who agreed with the innovation and those who disagreed with it do not differ significantly regarding their degree of dogmatism, or in their economic-welfare views. Since

---

[1] An unpublished survey of physicians in South Dakota reported that 72 percent felt the need for physician assistants.

TABLE 2

IDEOLOGIES OF PHYSICIANS ACCEPTING AND REJECTING THE NEED FOR PHYSICIAN ASSISTANTS

	Accepting		Rejecting		Chi Square	Probability[a]
	Number	Percent	Number	Percent		
TOTAL	90	100	10	100	χ^2	P <
ORIENTATION						
Profession	48	53.33	1	10.00	5.140	.025
Patient	42	46.64	9	90.00		
SUCCESS VALUE						
Low	52	57.78	0	0.00	9.833	.003
High	38	42.22	10	100.00		
DOGMATISM-ANXIETY						
High	40	44.44	8	80.00	3.245	N.S.
Low	60	55.56	2	20.00		
ECONOMIC-WELFARE VIEWS[b]						
Liberal	36	40.00	1	10.00		
Conservative	54	60.00	9	90.00		

[a]All tests were one-tailed; statistical significance accepted at the .05 level.

[b]Expected number too small for χ^2 computation.

only 10 physicians rejected the need for physician assistants, comparisons with this group could not be made.

The results were also analyzed by comparing those respondents who agreed "very much" (+3 on the scale) and "on the whole" (+2 on the scale) with the need for physician assistants to all other responses. These findings are summarized in Table 3. The accepting and rejecting physicians differ significantly regarding their dogmatic conceptualizations. Over 70 percent of the respondents who were less favorable to the need for physician assistants were high in dogmatism. On the other hand only 41 percent of those physicians who agreed "very much" or "on the whole" with the need were so classified. A comparison of the two groups shows a trend in the direction hypothesized for the other ideologies studied.

Eleven questions elicited the physician's view of duties that could be delegated to physician assistants. The respondent was asked to agree or disagree on the scale for each duty. From this it was possible to tabulate an overall score for the 11 questions with the lowest possible score being -33 and the highest score equaling +33. The actual range was -20 to +32 with a mean of +9.5. Further analysis of the data was accomplished by dividing the sample into two groups: those with delegation scores below the mean and those with scores above the mean. The assumption was that those physicians who were willing to delegate more duties to paramedical personnel could be considered as more "accepting" of these individuals. It is possible that the delegation of duties by physicians to paramedical personnel is more important than their perception of the need for this type of personnel. A comparison of the

TABLE 3

IDEOLOGIES OF PHYSICIANS WHO AGREE "VERY MUCH" AND "ON THE WHOLE" WITH THE NEED FOR PHYSICIAN ASSISTANTS AND ALL OTHER RESPONDENTS

	Agree (+3 and +2)		Others (+1, 0, -1, -2, and -3)		Chi	Prob-
	Number	Percent	Number	Percent	Square	ability
TOTAL	79	100	21	100	χ^2	P <
ORIENTATION						
Profession	43	54.43	6	28.57	3.465	N.S.
Patient	36	45.57	15	71.43		
SUCCESS VALUE						
Low	46	58.23	7	33.33	3.189	N.S.
High	33	41.77	14	66.67		
DOGMATISM-ANXIETY						
High	33	41.78	15	71.43	4.718	.05
Low	46	58.22	6	28.57		
ECONOMIC-WELFARE VIEWS						
Liberal	33	41.77	4	19.05	2.765	N.S.
Conservative	46	58.23	17	80.95		

differences in ideologies of the "low" duty delegating and "high" duty delegating physicians is summarized in Table 4. Those physicians who would delegate more duties were more profession oriented, had lower success value orientation, and had more liberal economic-welfare views than their "low" duty delegating colleagues. The differences in ideologies between the two groups were particularly significant for their success values ($P < .003$) and for their economic-welfare views ($P < .014$), but not for their dogmatic-anxiety conceptualizations.

A Governmental Guarantee of Medical Care

The other proposition tested concerned physician ideologies and their acceptance or rejection of the governmental guarantee of medical care as a right for everyone regardless of their ability to pay. In contrast to the previous proposition the distribution of the results was evenly spread and the ideological dimensions revealed several interesting results.

First, less than one-half, 47 percent, agreed that it was the government's responsibility to provide everyone with the best available medical care whether he could afford it or not. Only 14 percent of the entire sampled physicians agreed "very much" with the stated innovation. The accepting and rejecting physicians differed on all ideologies that were included in Proposition II of the Hypothesis. The results are summarized in Table 5 and support the hypothesis. Approximately 60 percent of those physicians who rejected this innovation were classified high in dogmatism-anxiety conceptualizations while only 36 percent of the accepting physicians were so classified. The two groups also differed significantly with regard to whether they were profession or patient

TABLE 4

IDEOLOGIES OF "HIGH" DELEGATING PHYSICIANS
AND "LOW" DELEGATING PHYSICIANS

	"High" Duty Delegating[a]		"Low" Duty Delegating[b]			
	Number	Percent	Number	Percent	Chi Square	Probability
TOTAL	50	100	50	100	χ^2	P <
ORIENTATION						
Profession	30	60.00	19	38.00	4.002	.05
Patient	20	40.00	31	62.00		
SUCCESS VALUE						
Low	34	68.00	18	36.00	9.014	.003
High	16	32.00	32	64.00		
DOGMATISM-ANXIETY						
High	23	46.00	25	50.00	.014	N.S.
Low	27	54.00	25	50.00		
ECONOMIC-WELFARE VIEWS						
Liberal	25	50.00	12	24.00	6.178	.014
Conservative	25	50.00	38	76.00		

[a]Agreed to more duties being performed by physician assistants, above the mean of 9.5.

[b]Agreed to fewer duties being performed by physician assistants, below the mean of 9.5.

TABLE 5

IDEOLOGIES OF PHYSICIANS ACCEPTING AND REJECTING A GOVERNMENTAL GUARANTEE OF MEDICAL CARE AS A RIGHT FOR EVERYONE

	Accepting		Rejecting		Chi	
	Number	Percent	Number	Percent	Square	Probability
TOTAL	47	100	53	100	χ^2	P <
ORIENTATION						
Profession	34	72.34	15	28.30	17.609	.001
Patient	13	27.66	38	71.70		
SUCCESS VALUE						
Low	32	68.09	20	37.74	8.017	.005
High	15	31.91	33	62.26		
DOGMATISM-ANXIETY						
High	17	36.16	31	58.50	4.118	.046
Low	30	63.84	22	41.50		
ECONOMIC-WELFARE VIEWS						
Liberal	33	70.21	4	7.55	39.320	.001
Conservative	14	29.79	49	92.45		

oriented. Of the physicians who were favorable to a governmental guarantee of medical care 72 percent were profession oriented and 28 percent were patient oriented. There was a reversal in percentages for those physicians who rejected governmental guarantee of medical care. Seventy-two percent of them were patient oriented and 28 percent were classified as profession oriented.

Thirty-two percent of the physicians who accepted the innovation had high success values compared to 62 percent for those who rejected the governmental guarantee of medical care. The greatest significant difference in ideology was noted for economic-welfare views ($P < .001$). Seventy percent of the accepting physicians held liberal economic-welfare views, while 93 percent of those physicians who rejected governmental guarantee of medical care held conservative economic-welfare views.

Therefore, the data support Proposition II of the Hypothesis, that a governmental guarantee of medical care as a right would be viewed more favorably by physicians who had low dogmatism-anxiety conceptualizations, low success value orientation, low patient orientation and, a low degree of conservative economic-welfare views.

Although some of the ideologies tested in Proposition I were not significant all of the data showed a trend in the same direction as in Proposition II. While a close concordance between the acceptance of the two propositions was not possible because of the low number of physicians who rejected the need for physician assistants, a comparison of the results was carried out. From the 47 percent of the sampled physicians who accepted governmental guarantee of medical care as a right for everyone, 87 percent also accepted either "very much" or "on the whole"

the need for physician assistants. In comparison, from the 53 percent of the sampled physicians who rejected governmental guarantee of medical care as a right for everyone, only 62 percent accepted the need for physician assistants either "very much" or "on the whole". Therefore, there is a possible predictive trend toward the identification of acceptors of change. The independent variables contained in both Proposition I and Proposition II were in the hypothesized directions. On the basis of the two specific medical care innovations that were measured in this research, the hypothesis is partially supported. The physician's acceptance or rejection of a governmental guarantee of medical care was significantly related to his degree of: dogmatic-anxiety conceptualizations, success value orientation, professional orientation and economic-welfare views. The physician's acceptance or rejection of the need for physician assistants was not, however, significantly related to all four ideologies.

The two innovations appear to be of different levels of importance to physicians. The difference might have resulted because the respondent was intellectualizing the question of the need for physician assistants; whereas a governmental guarantee of medical care as a right for everyone had emotional overtones and was perceived as a greater threat to physician self interests.

Information on contingent variables proved useful in varying degrees. Comparison of physician ideologies by religious background was not possible because of the large number of physicians with Protestant backgrounds, 88 percent. Likewise the political party affiliations of the physicians were heavily concentrated with 75 percent in the Republican party.

Selected contingent variables for those physicians who accepted and rejected the innovations are compared in Tables 6 and 7. Physicians who were graduated from medical school after 1950 tended to be more accepting of both the need for physician assistants and governmental guarantee of medical care than those physicians graduated prior to 1950. However the differences were not significant. The medical school which the physician attended had no influence on his acceptance or rejection of the innovations. Physicians who were either specialty board eligible or certified were significantly more accepting of the need for physician assistants, but at the same time, less favorable toward governmental guarantee of medical care as a right than physicians in general practice. The perceived need for physician assistants did not differ significantly for those physicians who received remuneration from a salary for fee-for-service. However, the salaried physicians more often favored a government guarantee of medical care than those in fee-for-service practice ($P < .025$). Although the figures were too small to be substantive and conclusive, political party affiliation seemed to have no significant effect on the acceptance of these innovations. Doctors practicing in urban settings, with a county population greater than 100,000 were significantly ($P < .014$) more favorable to the need for physician assistants than their counterparts in rural practice. Urban physicians were generally more profession oriented than rural physicians, 64 percent as compared with only 34 percent. The urban doctors showed higher success value orientations than rural doctors, but fewer held conservative economic-welfare views than their rural colleagues. The physicians in practice in the larger towns also seemed more willing to delegate more

TABLE 6

SELECTED CONTINGENT VARIABLES RELATED TO PHYSICIAN ACCEPTANCE OR REJECTION OF THE NEED FOR PHYSICIAN ASSISTANTS

	Accepted[a] Physician Assistant		Rejected Physician Assistant			
	Number	Percent	Number	Percent	Chi Square	Probability
TOTAL	79	100	21	100	χ^2	P <
YEAR MEDICAL SCHOOL GRADUATED						
After 1950	48	87.27	7	12.73	3.995	N.S.
Before 1950	31	68.89	14	31.11		
MEDICAL SCHOOL						
Outside of Oklahoma	37	77.08	11	22.92	.043	N.S.
Oklahoma University	42	80.77	10	19.23		
TRAINING						
Specialist	49	87.50	7	12.50	4.439	.05
General Practice	30	68.18	14	31.82		
INCOME SOURCE						
Salaried	22	73.57	6	21.43	.043	N.S.
Fee-For-Service	57	79.17	15	20.83		
POLITICAL PARTY						
Democrat	10	76.92	3	23.08	.050	N.S.
Republican	59	78.67	16	21.33		
Independent	10	83.33	2	16.67		
GEOGRAPHIC AREA						
Urban	45	90.00	5	10.00	6.028	.014
Rural	34	68.00	16	32.00		

[a]Accepted "very much" or "on the whole".

TABLE 7

SELECTED CONTINGENT VARIABLES RELATED TO PHYSICIAN ACCEPTANCE
OR REJECTION OF A GOVERNMENTAL GUARANTEE
OF MEDICAL CARE AS A RIGHT

	Accepted Government Guarantee		Rejected Government Guarantee			
	Number	Percent	Number	Percent	Chi Square	Probability
TOTAL	47	100	53	100	χ^2	P <
YEAR MEDICAL SCHOOL GRADUATED						
After 1950	30	54.55	25	45.45	2.160	N.S.
Before 1950	17	37.78	28	62.22		
MEDICAL SCHOOL						
Outside of Oklahoma	21	43.75	27	56.25	.181	N.S.
Oklahoma University	26	50.00	26	50.00		
TRAINING						
Specialist	31	55.36	25	44.64	.398	N.S.
General Practice	28	63.64	16	36.36		
INCOME SOURCE						
Salaried	19	67.86	9	32.14	5.678	.025
Fee-For-Service	28	38.89	44	61.11		
POLITICAL PARTY						
Democrat	6	46.15	7	53.85	.071	N.S.
Republican	35	46.67	40	53.33		
Independent	6	50.00	6	50.00		
GEOGRAPHIC AREA						
Urban	28	56.00	22	44.00	2.569	N.S.
Rural	19	38.00	31	62.00		

duties to paramedical personnel than those in smaller communities.

As a group, the general practitioners saw the least need for physician assistants. Surgeons were the second lowest in their perception of need for this type of medical personnel. However, a larger percentage of general practitioners than any of the specialists accepted government guarantee of medical care. Physicians within medical specialties (internal medicine, pediatrics and dermatology) scored significantly lower ($P < .05$) on the dogmatism anxiety scale than did any other group. On the other hand, the surgical specialists (general surgery, obstetrics-gynecology, orthopedics, urology and otorhinolaryngology) showed significantly higher ($P < .05$) dogmatism-anxiety scores. More than 75 percent of the medical specialists scored lower than the sample mean for dogmatism-anxiety while 63 percent of the surgical specialists were higher (Table 8).

Medical specialists were much more profession oriented than any other group, while the general practitioners were the most patient oriented. Physicians in medical specialties also had a higher proportion of doctors with low success value orientation, whereas the general practitioners had the highest proportion of physicians with high success value orientation. General practitioners were the most conservative in their economic-welfare views and physicians in the surgical specialties scored second in conservatism.

Seventy-six percent of the physicians who practiced in the urban areas were specialists as opposed to only 24 percent of those in rural practice. Also more specialists, 63 percent, had graduated from medical school outside of the state. One-half of the graduates from the

TABLE 8

ACCEPTANCE AND REJECTION OF TWO INNOVATIONS RELATED TO IDEOLOGICAL DIFFERENCES OF PHYSICIAN SPECIALTIES

	General Practice		Medical Specialties[a]		Surgical Specialties[b]		Other Specialties[c]		All Specialists	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
NEED FOR PHYSICIAN ASSISTANT										
Accepted*	30	68.18	12	92.31	25	83.33	12	92.31	49	87.50
Rejected	14	31.82	1	7.69	5	16.67	1	7.69	7	12.50
GOVERNMENT GUARANTEE OF MEDICAL CARE										
Accepted	28	63.63	7	53.85	16	53.33	8	61.54	31	55.36
Rejected	16	36.36	6	46.15	14	46.67	5	38.46	25	41.64
DOGMATISM-ANXIETY										
Below the Mean (Low)	23	52.27	10	76.92	11	36.67	8	61.54	29	51.79
Above the Mean (High)	21	47.73	3	23.08	19	63.33	5	38.46	27	48.21
ORIENTATION										
Professional	17	38.64	10	76.92	15	50.00	7	53.85	32	57.14
Patient	27	61.36	3	23.08	15	50.00	6	46.15	24	42.86
SUCCESS VALUE										
Low	18	40.91	11	84.62	14	46.67	9	69.23	34	60.71
High	26	59.09	2	15.38	16	53.33	4	30.77	22	39.29
ECONOMIC-WELFARE VIEWS										
Liberal	14	31.82	6	46.15	10	33.33	7	53.85	23	41.07
Conservative	30	68.18	7	53.85	20	66.67	6	46.15	33	58.93

*Accepted "very much" or "on the whole"

[a]Internal Medicine, Pediatrics, Dermatology

[b]General Surgery, Obstetrics-Gynecology, Orthopedics, Urology, Otorhinolaryngology

[c]Psychiatry, Pathology, Radiology, Anesthesiology, Neurology, Public Health

University of Oklahoma Medical School were specialists.

In summary, physicians who were more favorable to the acceptance of these two medical care innovations proved to be more liberal in their economic-welfare views, more profession oriented, less dogmatic held lower success values, were younger, had more training and practiced in urban communities.

CHAPTER IV

DISCUSSION AND SUMMARY

Throughout history, the physician, or his primitive counterpart, has maintained the primary role for health protection in organized society. In 1946, the medical historian Henry E. Sigerist wrote concerning the role (91):

> The place that the physician holds in a given society is determined by a variety of factors of which the most important are the social and economic structure of that society, the tasks it sets to its physicians, and finally the technology of medicine available to the doctors in such a period. These factors have changed a great deal in the course of time and so has, consequently, the position of the physician.

It is apparent that a dominant theme in the discussion of contemporary medical care innovation must be the role of the physician in the context of the prevailing social, political and economic conditions, on the one hand, and the physician's own ideologies and attitudes on the other. The society allows the physician his role and functions as long as they are fitted to the needs of its people. Societal endowment of the role of the physician may be conditioned upon the two innovations studied, adequate manpower distribution and utilization and the guarantee of health as a right for everyone.

The data presented in this study suggest that the ideologies of many physicians may not agree with prevailing social, political, and economic conditions concerning these two innovations. There are many

possible general explanations for this difference. Parsons (92) has noted the following:

> The role of physician is far along the continuum of increasingly high levels of competence required for performance.... There is an intrinsic connection between achieved statuses and requirements of high technical competence, as well as universalism and competence.

Other generalities that have been attributed to the medical profession are feelings of omnipotence (93) and cynicism (94). Many of the attitudes and ideologies of physicians have been traced to undergraduate and graduate medical education. Knowles (95) describes the product of medical school in the following manner:

> At the end of four years, he is a highly individualistic person cloaked with the charismatic robes of the profession, trained to take immediate action with the individual patient and to expect immediate rewards, with his knowledge firmly grounded in science .... But the broader issue of the physician's (as well as the patient's) place and problems in the world at large have been neglected.

Discussion of Results

The puzzling inconsistencies of the physician role in modern society are also exacerbated by the turmoil that exists in American society, itself ambivalent with respect to the role of the physician as private entrepreneur or public servant.

Certain limitations are inherent in this study. An exact definition of a physician assistant was purposely avoided because it is a generic term open to individual interpretation. Many of the physicians who answered affirmatively to the "need for this type of personnel" may have perceived the physician assistant as being capable of assuming limited responsibilities. Others defined the physician assistant as a highly trained individual, and perceived him as a possible threat; they

responded negatively to the "need for this type of personnel". The total score for delegation of duties to the physician assistant is therefore a more reliable index of the acceptance or rejection of the innovation. The wording of the statement "It is the responsibility of the entire society, through its government, to provide everyone with the best available medical care regardless of his ability to pay" may have contained too many separate elements that aroused ambivalent attitudes. The mention of "government" may have caused some to respond negatively even though they would agree that medical care is a right. Likewise, some physicians may have interpreted the "best available medical care" as meaning the most sophisticated and expensive care.

The two innovations that were selected in this research effort were both purposely broad. Neither of these innovations was a completely new concept to practicing physicians and both have been discussed at medical meetings. Professional and lay literature have contained pros and cons of both issues. A physician assistant training program began at the University of Oklahoma Medical Center in the Fall of 1970 and another program was planned to begin the following year at Oklahoma State University. The government, in fact, does guarantee medical care for those populations of Oklahoma covered by Medicare and Medicaid programs. Therefore, physicians did have knowledge of these issues and had an opportunity to form attitudes concerning them.

Despite these limitations the study does provide an empirical basis for deriving a number of significant generalizations concerning physician ideologies and their acceptance or rejection of medical care innovation. Furthermore a broader validity can be attributed to some of

the earlier studies concerned with physician ideologies, although further studies are necessary.

The medical profession's acceptance or rejection of both innovations clearly indicates that ideological and attitudinal determinants exist in the decision making process of physicians. This fact suggests a number of implications which can be expressed in the form of a series of specific generalizations:

1. Concomitant ideologies and attitudes tend to exist as "sets". The dogmatic physician also tends to be unaccepting of innovation, have higher success value orientations, be more conservative and oriented more towards his patients than his low dogmatic colleague. Although the data only partially supported the hypothesis regarding physician views concerning the need for physician assistants, the hypothesis was supported by their views of a governmental guarantee of medical care as a right. The findings on both questions do indicate a trend toward categorizing of attitudes into certain ideological sets. These are broader modes of thought than one elicits utilizing only one attitudinal dimension.
2. High dogmatic-anxiety physicians tend not to be accepting of medical care innovation. The dogmatism-anxiety scale did differentiate the accepting and rejecting physicians regarding a governmental guarantee of medical care as a right, but did not prove as useful with respect to the need for physician assistants. From previous studies of dogmatism among physicians, it was expected that this dimension of the study would have been more

significant. In general, respondents were not as dogmatic as would be expected from the stereotype of the physician. The data supports Rokeach's (81) contention that dogmatism is a generalized theory. It may be too unspecific or multi-dimensional for the study of innovation. The dimension of rigidity would be more specific; although rigidity is situational, and dependent upon knowledge and affect toward a specific object. More research is needed to define this dimension of dogmatism-anxiety.

3. More than one-half of the physicians persist in rejecting a governmental guarantee of medical care as a right for everyone. It would have been useful to have added a refined statement regarding whether the physicians consider health a privilege, or a right. The question is an emotional concern for physicians and may have elicited an intense affect response.
4. Physicians who graduated after 1950 tend to be more accepting of innovations. The younger physicians were more accepting particularly of the need for physician assistants. They were however not as liberal in their economic-welfare views as expected. A more discriminate age breakdown would have been preferable.
5. Specialists are more willing to accept physician assistants than general practitioners, but fewer of the specialists accept a governmental guarantee of medical care. Since physician assistants in many of the training programs, plan to work as primary care providers, they would be assisting general practitioners. The findings indicate that this is the group where resistance to

this innovation is greatest.

6. There is little difference in the acceptance of newer health manpower by physicians who are salaried and those in fee-for-service practice. However, those who are salaried are more likely to accept a governmental guarantee of medical care as a right. Many of the group practices and hospitals where physicians are salaried tend to use more paramedical personnel. Therefore the results are somewhat unexpected regarding this innovation. In a salaried setting there would appear to be a greater incentive to utilize physician assistants.
7. Urban physicians are more likely to accept medical care innovation than their rural colleagues. The greatest area of maldistribution of physician services is in the rural areas. Many areas have no physicians and rural physicians are overworked. Where medical care innovation is most needed, the greatest resistance exists.
8. Physicians who have liberal economic-welfare views are more likely to accept medical care innovation than those holding conservative views. Of the four ideologies in the present study, economic-welfare views were the most significant predictors of acceptance or rejection of the innovations. This finding warrants further research especially to ascertain broader dimensions of the conservative - liberal spectrum.

General Discussion

Some practical implications of these findings directly impinge upon future medical care in this country. At the very core of the

present medical care crisis is the physician. Have the ideologies and attitudes of many physicians made them incapable of admitting to the crisis and helping to change the system? If this is so, how do physicians obtain these attitudes? Can these attitudes be changed? Will society allow the present role of the physician to continue? Is the physician in our society obsolete in the wake of societal change?

Michael Michaelson (96) claims that the physician is obsolete and that our ideal of "doctor" remains rooted in the nineteenth century model. He proposes that today's physician is:

> ...perhaps the last remaining archtypal American - a self-sufficient, independent rugged individual after the frontier model, with illusions of omniscience and a life style of onmipotence.... The obsolescence of the American physician today is manifold, a product of his archaic education.

Perhaps the individuality that the physician is forced to sacrifice for high technical standards during his medical education does affect his ideologies and attitudes. Many of the physicians who reject medical care innovation may have obsolescence built in during their education. Nevertheless, a physician's education also builds in a pattern of primacy in the medical care system. Doctors have maintained a monopoly of control over patient care to the exclusion of nurses, technicians, administrators and other paramedical personnel, without which the practitioner of modern medicine could not function. Despite advances in training of these personnel, physicians have preserved a monopoly in the medical care system that leads one to the conclusion that it is run by and for the physician rather than by and for the patient. The physician of today shares little financial risk with the patient. He also shows little accountability to the society he serves.

One physician who was interviewed during this project summarized the difficulty of managing physicians by stating, "Eight out of ten physicians are prima donnas and the other two think they are!" Physicians must somehow come to grips with the issue of accountability to the society they serve. Their accountability and that of the health system will be the over-riding issue in American medicine during the next decade.

The demand for medical care clearly exceeds the ability of physicians in practice to provide it, particularly in rural communities. An example of the problem was brought out in this study in the case of four physicians with rural addresses who had moved out of the community and were located in residency programs: three were in radiology and the fourth in pathology. When asked why they left, they indicated that they were overworked. The maldistribution of physicians will probably worsen during this decade, and a large percent of the population will be underserved. It is unlikely that enough physicians can be trained to meet the demand. If as a national policy, every medical school doubled the size of its freshman class, after eight years there would be 16,000 new physicians (disregarding attrition) instead of the present 8,000 per year. Since current patterns indicate that 25 percent would choose not to administer directly to patients, this would mean a net gain of slightly over 6,000 practicing physicians (97).

It is estimated that about $11,000 per year is required to educate a medical student. As the student pays only $1,200 in tuition and fees, the rest must be made up from other sources. With many medical schools in precarious financial straits, an additional increase in

student enrollment would only further endanger their existence.

An obvious alternative to more physicians is a more efficient use and greater productivity of existing physicians. This implies that physicians must utilize physician assistants and delegate selected tasks. The military corpsman is a current example of a physician assistant. He provides primary care and performs a wide range of routine procedures that consume much of the private physician's time. Some 30,000 medical corpsmen are discharged from the military every year, each with an estimated $25,000 worth of training in medical skills. If only a third of these were to be utilized as physician assistants, the increase in manpower would be greater than a present doubling of medical students, assuming physicians would delegate half of the tasks they now perform. Another paramedical technician that is becoming more available is the midwife. Here again, the delegation of responsibilities by physicians is fundamental.

Under the predominant form of present medical practice in this country, there is little incentive for a physician to delegate duties to someone with lesser training. Many of the physicians acquired rigid attitudes about the use of paramedical personnel during their medical education. It is here again that attitudes could be altered. Attitudes and ideologies of medical educators, who impart their values to students by subtle and overt cues must change. These teachers should encourage the student to question old precepts such as the use of paramedical personnel.

Individual physicians, whether or not they desire it, are identified as representatives of organized medicine. Physicians may differ

about contemporary problems of medicine or be confused by them. Nevertheless organized medicine, particularly the American Medical Association, speaks loudest for the profession. The AMA calls for liberty for all physicians, reduced regimentation and accountability, and restriction of national health legislation.

At the same time, the individual medical practitioner seems politically uninterested and uninvolved; while appearing to be aloof from broader social and political concerns. In effect, he defends the status quo and the positions of organized medicine through acquiescent silence. He falls easy victim to the American businessman's psychology of individualism. Freedom becomes freedom from government interference, except of course, for rigid licensure laws, construction of more hospitals and funds for research that increase the demand for medical services.

Organized medicine has continually cloaked the entrepreneurial policy of business unionism with a mantle of professional ethics while assuming the pose of protector of the nation's health. The fragile mythology has successfully controlled the supply of physicians, governmental health insurance, and ultimately, the provision of medical care (98).

Since many of the sampled physicians in Oklahoma reject a governmental guarantee of medical care as a right for everyone regardless of ability to pay, it seems warranted to conclude that they are in essential agreement with the basic tenets expounded by organized medicine. Noteworthy are the high significant differences between the ideologies of the accepting and rejecting physicians toward this issue. Of particular interest is the apparent ambiguity in the results for physician

orientation and willingness to accept the change. The physician who is truly profession-oriented (concerned with colleague judgement of his actions) tends to accept a point of view at variance with his professional organization. On the other hand, the patient-oriented physician tends to adhere to the status quo and expound the philosophy of organized medicine. The physicians who were profession-oriented also tended to be ideologically liberal in economic-welfare views.

The contingent variable that proved of highest significance in association with the opinion that a governmental guarantee of medical care should be a right for everyone was the income source of the physician. Those physicians who receive a salary tend to favor a governmental guarantee of medical care. This innovation evoked significantly different results in relation to all ideologies measured in the hypothesis. A high concordance was obtained between relative liberalism, profession-orientation, low success value, and low dogmatism anxiety.

Since the responses represent general self perceptions, the issue of governmental guarantee of medical care may have tapped some attitudinal set or ideological dimension far broader than the economic and political realm. Since advocacy of change and disruption of the status quo are signalizing features of the term "liberal", liberal physicians might be expected to look to their profession for changes in medical care. They also might feel less threatened by change than their conservative colleagues and therefore hold success values as less important. Since the individual who is open to change would also be expected to be more flexible, the liberal physician might also be less dogmatic and rigid in his conceptualizations. However, more controlled studies

should focus on these suggestive trends to identify broader political, social and economic ideologies that may influence the acceptance or rejection of innovation.

Innovation is not new in medicine. The profession has often demonstrated flexibility in the face of technological developments and changing social needs. In the first decades of this century American medicine adjusted to the Flexner revolution which improved the quality of both medical education and of medical care. Funkenstein (99) divides the development of medicine in the twentieth century into four eras according to the predominant emphasis in practice, teaching and social responsibility. The general practice era, from 1910 to 1940, emphasized the needs of the individual patient and the application of the physician of methods from the basic sciences in treatment. From 1940 to 1959 the role of the specialist became increasingly important and the general practitioner had more difficulty keeping current with rapidly expanding medical knowledge. During the 1960's science and research grew increasingly more specialized and the clinical skills often appeared to be taking an inferior role. The fourth era is just beginning, in which many physicians, particularly the younger ones, are thinking strongly in terms of the need for achieving a more even distribution of medical care than exists today. This will involve even more changes in methods of financing, changes in predominant modes of practice, changes in emphasis from research to delivery of health care, changes in medical education, changes in manpower utilization, and a great increase in concern for the social and cultural factors that interfere with health.

Federal emphasis during the 1970's will focus on gaining control

of medical care costs. Several programs have already been introduced to provide incentives for new systems. Among these are: Health Maintenance Organizations (100), which are prepaid, group-practice plans similar to the Kaiser Foundation Medical Care Program; Family Health Centers, which are comprehensive health care programs smaller than Health Maintenance Organizations, for rural and urban settings; and Experimental Health Delivery Systems (101), which are intended to encourage new methods for delivery of comprehensive health care. Perhaps the most dramatic development accompanying the Federal effort to control medical costs is the 1970 amendment to Title XVIII (Medicare) of the Social Security Act. This included Part C, under which Medicare beneficiaries may select comprehensive health care through a prepaid group practice in lieu of the existing insurance provided by Parts A and B. In so doing, the Federal government seeks to stimulate the development of comprehensive prepaid group practices, with substantial savings. States are being encouraged to negotiate annual capitation contracts as an option for the medically indigent covered under Title XIX, the Medicaid program.

The pattern and intensity of present discussions, and the diversity of political and ideological sponsorship and endorsement of national health insurance proposals, indicate that the question is no longer whether the United States will adopt a universal health insurance, but when, through what medical care systems, and with what service benefits. Advocacy of universal health insurance has come from such diverse political quarters as the AFL-CIO and the American Medical Association. The latter is sponsoring a plan for income tax credits to assist in purchasing voluntary health insurance. Whichever form of universal health coverage

evolves, the patterns of health service will be different, and the innovations in medical care during this decade seems destined to be greater than in any previous era.

The elitism and rigidity of the old post-Flexner professionalism, which sought to protect the status quo is sure to be tested. However, quality and availability of services to society must take first priority. Suitable incentives should take precedence over controls. At the same time resources must be allocated whereby society receives maximum output from its medical manpower, capital and knowledge.

Resistance to change by some physicians will be overcome by the realities of change itself. The heretofore limited experience of physicians in delegating duties to lesser trained individuals, and the limited interaction of private medicine with government responsibility will give way to new approaches. Quite properly, physicians will continue to be concerned primarily with providing services to their patients. Many physicians are convinced that only they can administer the care, and that a government guarantee of medical care would interfere with their effectiveness. Other physicians are willing to accept innovations in order to improve patient care.

It is perhaps promising that physicians do not all share the same attitudes and ideologies, that some are resistant to innovation and force the acceptors of innovation substantially to assess the effects of modification on the medical care system.

The dimensions of the medical care crisis today demand innovation, but options exist for a pragmatic and pluralistic approach to alternatives for the present system. In the mid 1960's Surgeon General

William H. Stewart wrote that the United States has an "...emerging system of medical services, a system which is neither 'state medicine', nor 'socialized medicine', nor 'private medicine', but a combined public private effort for comprehensive health care in every American community" (102). The shaping of this "emerging system" will require the physician to considerably change his ideologies and attitudes toward medical care innovation for the society he serves.

BIBLIOGRAPHY

1. Gardner, J. W. 1964 Self Renewal. Harper and Row, New York: 28.

2. Health Manpower Action to Meet Community Needs. 1967 Report of the National Commission on Community Health Services. Public Affairs Press, Washington, D.C.

3. Review of Literature in: Segall, H. 1966 The Influence of Culture on Visual Perception. Bobbs-Merrill, Indianapolis.

4. Hare, A. (ed.) 1962 Handbook on Small Group Research. Free Press, New York,

5. Tagiuri, R. and Petrullo, L. (eds.) 1958 Person Perception and Interpersonal Behavior. Stanford Univ. Press, Stanford, Calif.

6. Sherif, C. W. and Sherif, M. 1967 Attitudes, Ego-Involvement and Change. John Wiley and Sons, New York:112.

7. Sherif, C. W. and Sherif, M. 1967 Attitudes, Ego-Involvement and Change. John Wiley and Sons, New York:115.

8. Harvey, O. J. and Beverly, G. D. 1959 Some Personality Correlates on Concept Change Through Role Playing. J. of Abnormal and Social Psychol., 63:25.

9. Hood, W. R. 1962 Some Conceptual Variables Involved in Behavioral Rigidity. Unpublished Paper. (Presented at Symposium on Social Behavior, Southwestern Psychological Association, Fort Worth, Texas).

10. Merton, R. K. (ed.) 1957 The Student-Physician. Harvard Univ. Press, Cambridge, Mass.:131-136.

11. Rossi, E. C. 1965 Why is the Medical Profession Estimable in the Individual but not in the Generality? Perspec. in Biol. and Med., (Winter):230-240.

12. Time. 1969 The Plight of the U.S. Patient. Feb. 21:53-58.

13. Business Week. 1970 The $60-billion Crisis over Medical Care. Jan. 17:50-54.

14. Fortune. 1970 Our Ailing Medical System. Jan.:79-99.

15. Saturday Review. 1970 Health Care: Prescription for Change. Aug. 22:17-32.

16. Rosen, G. 1969 Health Services in Technically Advanced Societies. Am. J. Pub. Hlth., 59:411-412.

17. Ebert, R. H. 1969 Changes in the Health System. J. Amer. Pharmaceutical Assoc., 9:402-404.

18. McNerney, W. J. 1970 Why Does Medical Care Cost So Much? New Eng. J. Med., 282:1458-1465.

19. Time. 1971 Health Care: Supply, Demand and Politics. June 7:86-93.

20. Lewis, I. J. 1971 Government Investment in Health Care. Scientific American, 224:17-25.

21. Kissick. W. L. 1970 Health-Policy Directions for the 1970's. New Eng. J. Med., 282:1343-1354.

22. United States Department of Health, Education, and Welfare. 1963 Public Health Service: The Community Mental Health Centers Act. PHS Publication No. 1298. Government Printing Office, Washington, D.C.

23. United States Department of Health, Education, and Welfare. 1965 Grants for Comprehensive Health Services for Children and Youth: Policies and Procedures. Government Printing Office, Washington, D.C.

24. Schorr, L. B. and English, J. T. 1968 Background, Context and Significant Issues in Neighborhood Health Center Programs. Milbank Memorial Fund Quart., 46:292-296.

25. Jacobs, A. R. and Froh, R. B. 1968 Significance of Public Law 89-749: Comprehensive Health Planning. New Eng. J. Med., 279:1314-1318.

26. Hogbin, I. 1958 Social Change. C. A. Watts Publishing Co., London:125-151.

27. Lewis, I. J. 1971 Government Investment in Health Care. Scientific American, 224:17-25.

28. Knowles, J. H. 1969 The Quantity and Quality of Medical Manpower: A Review of Current Efforts. J. Med. Educ., 44: 81-118.

29. United States Department of Health, Education, and Welfare. 1964 Public Health Service: Health Manpower Source Book. Section 18. Manpower in the 1960's. PHS Publication No. 263, Government Printing Office, Washington, D.C.:17.

30. United States Department of Health, Education, and Welfare. 1969 Bureau of Health Professions Education and Manpower Training. Division of Allied Health Manpower: The Allied Health Professions Personnel Training Act of 1966, As Amended: Report to the President and Congress. Government Printing Office, Washington, D.C.:21.

31. Fuchs, V., Rand, E., and Garret, B. 1970 The Health Manpower Gap Re-examined. New Eng. J. Med., 282 (6):338.

32. Ginzberg, E. 1969 Facts and Fancies About Medical Care. Am. J. Pub. Hlth., 59:785-794.

33. Goldstein, J. 1970 Medical Corpsmen as a Source of Civilian Health Manpower for New Jersey. Medical Care, 8:254-260.

34. Robers, K. D., Mally, M., and Marcus, F. L. 1968 A General Medical Practice Using Non-Physician Personnel. J.A.M.A., 206:1753-1757.

35. Sidel, V. W. 1968 Feldshers and Feldsherism. New Eng. J. Med., 278:934-940.

36. Sidel, V. W. 1968 Feldshers and Feldsherism. New Eng. J. Med., 278:981-992.

37. Rosinski, E. F. 1965 The Assistant Medical Officer. Univ. of N. Carolina Press, Chapel Hill, N. C.:21-29.

38. Kadish, J., and Long, J. W. 1970 The Training of Physician Assistants: Status and Issues. J.A.M.A., 212:1047-1051.

39. Friedson, E. 1961 Patients Views of Medical Practice. Russell Sage Foundation, New York.

40. Metzner, C. A. and Gurin, G. 1960 Personal Response and Social Organization in a Health Campaign. Bureau of Health Economics, Research Series No. 9, University of Michigan, Ann Arbor, Michigan.

41. Suchman, E. 1967 The Survey Method as Applied to Public Health and Medicine (In) Glock, Charles (ed.) 1967 Survey Research in the Social Sciences. Russell Sage Foundation, New York:467.

42. Pearlin, L. I. 1962 Sources of Resistance to Change in a Mental Hospital. Amer. J. Sociol., 68:325-334.

43. Coe, R. M. 1967 Processes in the Development of Established Professions. J. Hlth. Soc. Behav., 11:59-66.

44. Rogoff, N. 1957 The Decision to Study Medicine. (In) Merton, R. K., Reeder, G. G., and Kendall, P. L. (eds.) 1957 The Student Physician. Harvard University Press, Cambridge:109-130.

45. Calahan, D. 1957 Career Interests and Expectations of U.S. Medical Students. J. Med. Educ., 32:557-563.

46. Back, K. W., Coker, R. E., and Donnelly, T. G. 1958 Public Health as a Career in Medicine: Secondary Choice Within a Profession. Amer. Sociol. Rec., 23:533-541.

47. Becker, H. and Geer, B. 1963 Medical Education. (In) Freeman, H. E., Levine, S., and Reeder, L. G. Handbook of Medical Sociology. Prentice-Hall, Englewood Cliffs, N. J.:169-186.

48. Huntington, J. J. 1957 The Development of a Professional Self Image. (In) Merton, R. K., et al., The Student Physician op cit: 179-187.

49. Kutner, B. 1958 Surgeons and Their Patients: A Study of Social Perception. (In) Jaco, E. G. (ed.) Patients, Physicians and Illness. Free Press, Glencoe, Ill.:384-397.

50. Straus, R. 1958 Medical Practice and the Alcoholic. Ann. Amer. Acad. Pol. Soc. Sci., 315:117-124.

51. Becker, M. H. 1969 Predictors of Innovative Behavior Among Local Health Officers. Public Health Reports, 84 (12):1063-1068.

52. Menzel, H. and Katz, E. 1956 Social Relations and Innovation in the Medical Profession: The Epidemiology of a New Drug. Public Opinion Quarterly, 19:337-352.

53. Coleman, J., Katz, E., and Menzel, H. 1967 The Diffusion of an Innovation Among Physicians. Sociometry, 20:253-270.

54. Glaser, W. A. 1960 Doctors and Politics. Amer. J. Sociol., 66:230-245.

55. Colombotos, J. 1968 Physicians Attitudes Toward Medicare. Medical Care, 6:320-321.

56. Colombotos, J. 1969 Physicians Attitudes Toward a County Health Department. Amer. J. Pub. Hlth., 59:53-59.

57. Colombotos, J. 1969 Physicians Attitudes Toward a County Health Department. Amer. J. Pub. Hlth., 59:58.

58. Colombotos, J. 1969 Social Origins and Ideology of Physicians: A Study of the Effects of Early Socialization. J. Hlth. Soc. Behav., 10:16-29.

59. Colombotos, J. 1969 Physicians and Medicare. (In) Jaco, E. G., (ed.) Patients, Physicians and Illness. The Free Press, New York.

60. Vacchiano, R. B. 1969 The Open and Closed Mind: A Review of Dogmatism. Psychol. Bulletin, 71:110-118.

61. Parker, S. 1958 Personality Factors Among Medical Students Related to Their Predisposition to View the Patient as a "Whole Man". J. Med. Educ., 33:736-744.

62. Adorno, T. W., Frenkel-Brunswick, E., Levenson, D. J. and Sanford, R. N. 1950 The Authoritarian Personality. Harper Brothers, New York.

63. Coker, R. E., Greenberg, B. G. and Kosa, J. 1965 Authoritarianism and Machiavellianism Among Medical Students. J. Med. Educ., 40:1074-1084.

64. Marcus, E. H. 1964 Dogmatism and the Medical Profession. J. Nerv. Ment. Dis., 138:114-118.

65. Kaupen-Haas, H. 1969 Stabiltat und Wandel Artzflicher Autoritat (Continuity and Change of Medical Authority), Ferdinand Enke Verlag, Stuttgart. Reviewed in Der Spiegal, Dec. 22, 1969. (Translated by Ann Lynch, Central State University, Edmond, Oklahoma).

66. Coye, R. D. and Hanson, M. F. 1969 The "Doctor's Assistant": A Survey of Physicians' Expectations. J.A.M.A., 209:529-533.

67. McGrath, J. H., McKusick, M. J., and Paulschock, B. Z. 1970 Needs for Physicians' Assistants. J.A.M.A., 214:147-148.

68. Shulze, R. H. 1962 A Shortened Form of the Rokeach Dogmatism Scale. J. Psychol. Studies, 13:93-97.

69. Roemer, M. I. and Elling, R. H. 1963 Sociological Research on Medical Care. J. Hlth. Hum. Behav., 4:49-68.

70. Wallace, A. F. 1956 Revitalization Movements. Amer. Anthro., 58:279.

71. Hanlon, C. R. 1971 The Physician and Organized Medicine. New Eng. J. Med., 284 (20):1131-1134.

72. Winkelstein, W. and French, F. E. 1970 The Role of Ecology in the Design of a Health Care System. California Medicine, 113 (5):7-12.

73. Oklahoma State Board of Medical Examiners. 1970 Official List of Licensed and Registered Physicians and Surgeons, January 1, 1970:46.

74. Health Resources Information Center. 1970 A Listing of Oklahoma Physicians, University of Oklahoma School of Health, Oklahoma City, Oklahoma.

75. West, K. M. 1969 Physician Manpower in Oklahoma. Okla. St. Med. Soc. J., 62:575.

76. West, K. M. 1969 Physician Manpower in Oklahoma. Okla. St. Med. Soc. J., 62:576.

77. West, K. M. 1969 Physician Manpower in Oklahoma. Okla. St. Med. Soc. J., 62:579.

78. Rokeach, M. 1956 Political and Religious Dogmatism: An Alternative to the Authoritarian Personality. Psychol. Monogr., 70:20.

79. Shulze, R. H. 1962 A Shortened Form of the Rokeach Dogmatism Scale. J. Psychol. Studies, 13:93-97.

80. Likert, R. 1932 A Technique for the Measurement of Attitudes. ARCH Psychol., 140:231.

81. Rokeach, M. 1956 Political and Religious Dogmatism: An Alternative to the Authoritarian Personality. Psychol. Monogr., 70:22.

82. Fruchter, B., Rokeach, M., and Novak, E. 1958 A Factorial Study of Dogmatism, Opinionation and Related Scales. Psychol. Reports, 4:19-22.

83. Vacchiano, R. B. 1969 The Open and Closed Mind: A Review of Dogmatism. Psychol. Bulletin, 71:110-118.

84. Plant, W. T. 1960 Rokeach's Dogmatism Scale as a Measure of General Authoritarianism. Psychol. Reports, 6:221.

85. Riley, J. and Armlin, N. J. 1965 The Dogmatism Scale and Flexibility in Maze Performance. Perceptual and Motor Skills, 21:19.

86. DiRenzo, G. J. 1967 Dogmatism and Orientations Toward Liturgical Change. J. Scien. Study Relig., 6:69-75.

87. Colombotos, J. 1969 Social Origins and Ideology of Physicians: A Study of the Effects of Early Socialization. J. Hlth. Soc. Behav., 10:20.

88. Colombotos, J. 1969 Social Origins and Ideology of Physicians: A Study of the Effects of Early Socialization. J. Hlth. Soc. Behav., 10:22.

89. Coleman, J., Katz, E., and Menzel, H. 1967 The Diffusion of an Innovation Among Physicians. Sociometry, 20:253-270.

90. Colombotos, J. 1969 Social Origins and Ideology of Physicians: A Study of the Effects of Early Socialization. J. Hlth. Soc. Behav., 10:21.

91. Sigerist, H. E. 1946 The Place of the Physician in Modern Society. Proceedings of the American Philosophical Society, 90:275-279; reproduced in Roemer, Milton I. (ed.) 1960 Henry E. Sigerist on the Sociology of Medicine. M.D. Publications, New York.

92. Parsons, T. 1951 The Social System. The Free Press, Glencoe, Ill.:428-429.

93. Kane, R. L. and Kane, R. A. 1969 Physicians' Attitudes of Omnipotence in a University Hospital. J. Med. Educ., 44: 684-690.

94. Becker, H. S. and Geer, B. 1958 The Fate of Idealism in Medical School. Amer. Soc. Review, 23:50-56.

95. Knowles, J. H. (ed.) 1968 Views of Education and Medical Care. Harvard University Press, Cambridge, Mass.

96. Michaelson, M. G. 1970 The Failure of American Medicine. The American Scholar, 39:694-706.

97. Cobb, C. M. 1970 Solving the Doctor Shortage. Saturday Review, August 22:24-26.

98. Mills, C. W. 1956 White Collar. Oxford University Press, New York:115-121.

99. Funkenstein, D. H. 1969 Medical Education for Social Responsibility. New Physician, 18:709-718.

100. Ellwood, P. M. 1971 Health Maintenance Organizations, Concept and Strategy. J.A.H.A., 45:53-56.

101. Geiger, H. J. and Cohen, R. D. 1971 Trends in Health Care Delivery Systems. Inquiry, 8:32-36.

102. Stewart, W. H. 1963 Community Medicine: An American Concept of Comprehensive Care. Public Health Reports, 78:93-100.

APPENDIXES

APPENDIX A

LETTER TO PHYSICIANS

HUMAN ECOLOGY

SCHOOL OF HEALTH

THE UNIVERSITY OF OKLAHOMA
MEDICAL CENTER
800 NORTHEAST THIRTEENTH STREET
OKLAHOMA CITY, OKLAHOMA 73104

Dear Doctor

There is a great deal of discussion these days concerning changes taking place in the practice of medicine but little information has been gathered from practicing physicians. A research project at the University of Oklahoma School of Health is attempting to get physician input regarding medical care changes and your name was randomly selected from a list of physicians practicing in Oklahoma.

Reviews of the literature point up a lack of physician opinions regarding the issues of Medical Care delivery. The practicing physician, as head of the health care team, must play the most important role in Medical Care delivery. This study will use a questionnaire which requires 20 minutes to complete. The questions deal with such items as the roles you see for new paramedical personnel, your attitudes concerning the physician-patient relationship and other contemporary issues of society and medicine. Your name and replies will be held in confidence. The final report will be a compilation of statistics gathered from physicians throughout Oklahoma and a copy will be sent to you for your information.

I will telephone you within the week to ask your cooperation and to arrange a convenient time and manner for the interview.

I will appreciate your assistance with this research project and look forward to talking with you soon.

Sincerely,

James F. McTigue
Graduate Student

JFM/ba

APPENDIX B

QUESTIONNAIRE

NAME _____

ADDRESS _____

_____

SPECIALTY _____ Board Eligible /__/

Board Certified /__/

Major Income Source: Fee For Service /__/

Group Salary /__/

Hospital Salary /__/

Other _____ /__/
(Specify)

Type of Practice: Private /__/

One Specialty Group /__/

Multi Specialty Group /__/

Birth Date: _____

Birth Place: _____

Where Graduated From: High School: _____

College: _____

Medical School: _____

Year of Medical School Graduation: _____

Are you affiliated with the Medical School: _____
(Specify)

1. In what religion were you brought up? _____

2. Did you father consider himself primarily a Democrat or a Republican? _____

3. Do you consider yourself primarily a Democrat or a Republican? _____

4. What was your father's major occupation? _____

5. How would you rank the importance of these characteristics in recognizing a good doctor in a town (community) like this? (1. Most Important, 2. Next Most Important, etc.)

   a)_____ The respect in which he is held by his own patients

   b)_____ His general standing in the community

   c)_____ The recognition given him by his colleagues

   d)_____ The research and publications he has to his credit

6. Which of the following things was the most important to you <u>then</u> in your decision to go into medicine - was it (Check only one)

   a)_____ the social prestige of a medical career

   b)_____ the chance to help people

   c)_____ the chance to do work of special interest to you, or

   d)_____ the economic opportunity?

7. Which of these things was <u>second</u> most important to you then in your decision to go into medicine?

   a)_____; b)_____; c)_____; d)_____

8. What about the <u>present</u> - which of these things is most important to you now - is it the social prestige of a medical career .....?

   a)_____; b)_____; c)_____; d)_____

9. Which of these things is second most important to you now?

   a)_____; b)_____; c)_____; d)_____

The training of "doctors assistants" or "clinical associates" has been suggested as one way to alleviate the medical manpower shortage. The following questions ask for your views on such a training program and the ways in which these persons might affect your own practice situation.

I will list various medical duties. For each one indicate whether you AGREE or DISAGREE that it is an appropriate duty for your idea of a physician's assistant. Please check a position that indicates how strongly you agree or disagree with it

1 = A Little, 2 = On the Whole and 3 = Very Much.

10.	Working as a surgical assistant in the operating room	Agree	3	2	1	0	1	2	3 Disagree
11.	Doing preliminary histories	Agree	3	2	1	0	1	2	3 Disagree
12.	Doing portions of the physical examination (excluding pelvic, for example)	Agree	3	2	1	0	1	2	3 Disagree
13.	Doing technical procedures only (intravenous injections, catheterizations, etc.)	Agree	3	2	1	0	1	2	3 Disagree
14.	Doing simple emergency room procedures (e.g. suture lacerations, extract foreign bodies)	Agree	3	2	1	0	1	2	3 Disagree
15.	Giving anesthetics in routine cases	Agree	3	2	1	0	1	2	3 Disagree
16.	Providing routine postoperative care	Agree	3	2	1	0	1	2	3 Disagree
17.	Doing uncomplicated deliveries	Agree	3	2	1	0	1	2	3 Disagree
18.	Doing routine prenatal checkups	Agree	3	2	1	0	1	2	3 Disagree
19.	Doing routine "well baby" follow-ups, including immunization	Agree	3	2	1	0	1	2	3 Disagree
20.	Making a preliminary judgement as to whether a physician is needed	Agree	3	2	1	0	1	2	3 Disagree

21. An "assistant" would enable you to see more patients?

Agree 3 2 1 0 1 2 3 Disagree

22. An "assistant" would allow you to have more time for post graduate training?

Agree 3 2 1 0 1 2 3 Disagree

23. An "assistant" would enable you to concentrate on patients with greater need?

Agree 3 2 1 0 1 2 3 Disagree

24. There is a need for this type of medical personnel?

Agree 3 2 1 0 1 2 3 Disagree

25. These assistants should receive a Bachelor's Degree level training

Agree 3 2 1 0 1 2 3 Disagree

26. Medical Corpsmen with some extra training could serve as "physician's assistants" in private practice

Agree 3 2 1 0 1 2 3 Disagree

27. Could you use a person of this type in your practice?

Agree 3 2 1 0 1 2 3 Disagree

28. What salary do you think this type of person should receive?

Under $7,500 /__/; $7,500 to $10,000 /__/; $10,000 to $15,000 /__/
Over $15,000 /__/

29. Should the "doctor's assistant" or "physician's assistant" have training to a level approximating that of a registered nurse, or more or less

More /__/ Same /__/ Less /__/

Now I'm going to read some statements people have made as their opinion on several topics. You may find yourself agreeing strongly with some of the statements...disagreeing just as strongly with others...and perhaps uncertain about others. Whether you agree or disagree with any statement, you can be sure that many other people feel the same as you do.

We want your personal opinion on each of the following STATEMENTS. When I read each one tell me whether, in general, you agree or disagree with it then tell me a number....one, two, or three....that indicates how strongly you agree or disagree with it.

30. Fundamentally, the world we live in is a pretty lonely place. Agree 3 2 1 0 1 2 3 Disagree

31. It is often desirable to reserve judgement about what's going on until one has a chance to hear the opinions of those one respects. Agree 3 2 1 0 1 2 3 Disagree

32. A person who thinks primarily of his own happiness is beneath contempt. Agree 3 2 1 0 1 2 3 Disagree

33. In the history of mankind there have probably been just a handful of really great thinkers. Agree 3 2 1 0 1 2 3 Disagree

34. Most people just don't know what is good for them. Agree 3 2 1 0 1 2 3 Disagree

35. One I get wound up in a heated discussion I just can't stop. Agree 3 2 1 0 1 2 3 Disagree

36. The worst crime a person can commit is to attack publicly the people who believe in the same thing he does. Agree 3 2 1 0 1 2 3 Disagree

37. In this complicated world of ours the only way we can know what is going on is to rely upon leaders or experts who can be trusted. Agree 3 2 1 0 1 2 3 Disagree

38. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own. Agree 3 2 1 0 1 2 3 Disagree

39. While I don't like to admit this even to myself, I sometimes have the ambition to become a great man like Einstein, or Beethoven, or Shakespeare.

Agree 3 2 1 0 1 2 3 Disagree

40. People ought to experiment with new ideas even if they seem to go against tradition.

Agree 3 2 1 0 1 2 3 Disagree

41. The government must continue to play a major part in the economic life of the nation.

Agree 3 2 1 0 1 2 3 Disagree

42. It is the responsibility of the entire society through its government, to guarantee full employment.

Agree 3 2 1 0 1 2 3 Disagree

43. Poverty could almost be done away with if we made certain basic changes in our social and economic system.

Agree 3 2 1 0 1 2 3 Disagree

44. It is the responsibility of the entire society, through its government, to provide everyone with the best available medical care, whether he can afford it or not.

Agree 3 2 1 0 1 2 3 Disagree

45. There is need for more legislation for medical care for the poor.

Agree 3 2 1 0 1 2 3 Disagree

46. There is need for bills that would provide for compulsory national health insurance.

Agree 3 2 1 0 1 2 3 Disagree

47. The A.M.A. Medicredit proposal that would allow for tax credits is the best plan.

Agree 3 2 1 0 1 2 3 Disagree

48. Finally, would you discuss what changes you would like to see made, if any, in the financing and delivery of health services in Oklahoma.

APPENDIX C

DOGMATISM SCALE PRE-TEST

APPENDIX C

PRE-TEST FOR SHULZE'S TEN ITEM DOGMATISM-ANXIETY SCALE

$$r = \frac{n\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{n\Sigma x^2 - (\Sigma x)^2}\ \sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

$\Sigma x = 511$
$\Sigma y = 145$
$\Sigma x^2 = 17,273$
$\Sigma y^2 = 1,359$
$\Sigma xy = 4,501$

x	y	x^2	y^2	xy
-11	- 1	121	1	11
-23	-11	529	121	253
-18	- 8	324	64	144
-38	-11	1444	121	418
-26	- 7	676	49	182
-30	-17	900	289	510
-17	- 7	289	49	119
-30	- 5	900	25	150
-57	- 9	3249	81	513
-12	- 6	144	36	72
-16	- 2	256	4	32
-10	- 4	100	16	40
-38	- 9	1444	81	342
-20	- 9	400	81	180
-17	- 6	289	36	102
-55	-11	3025	121	605
- 3	+ 2	9	4	6
-17	- 6	289	36	102
-47	-12	2209	144	564
-26	- 6	676	36	156
511	145	17273	1395	4501

$$r = \frac{20\,(4501) - (511)\,(145)}{\sqrt{20\,(17,273) - (511)^2}\ \sqrt{20\,(1395) - (145)^2}}$$

$$r = \frac{90,020 - 74,095}{\sqrt{345,460 - 261,121}\ \sqrt{27,900 - 21,025}}$$

$$r = \frac{15,925}{\sqrt{84,339}\ \ \sqrt{6,875}}$$

$$r = \frac{15,925}{(290.40)\ (82.91} \qquad r = \frac{15,925}{24,077.06} \qquad r = .66141$$

$p < .005$